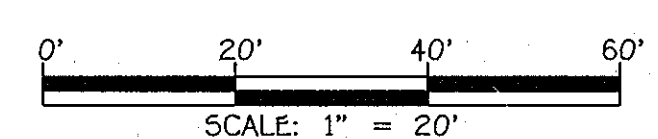


NOTE: THE EXISTING SHC SHALL BE ABANDONED AND REMOVED IN ITS ENTIRETY AT THE 8'x6' TEE. A WATER TIGHT PLUG SHALL BE INSERTED.

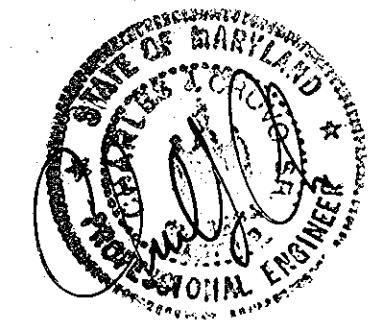
NOTE: A WETLAND, FOREST STAND DELINEATION AND FOREST CONSERVATION PLAN AND REPORT WAS SUBMITTED WITH THE ROSE MEADOWS RECORD PLAT (F-07-102).



LEGEND

- 2' EXISTING 2' CONTOUR
- 10' EXISTING 10' CONTOUR
- ▭ PROPOSED HOUSE
- ◊ EXISTING WOODS
- ☼ PROPOSED PERIMETER LANDSCAPE TREES Under F-07-102
- ▲ FOREST CONSERVATION SIGN
- 10' PROPOSED 10' CONTOUR
- 2' PROPOSED 2' CONTOUR
- ▨ EXISTING FLOOD PLAN

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SERVICE OFFICE PARK - 10276 BALTIMORE NATIONAL PIKE
 ELKLOTT CITY, MARYLAND 21042
 (410) 461-2855



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2010."

Charles J. Crook, Sr.
 CHARLES J. CROOK, SR., P.E.
 4/7/10 DATE

DATE	DESCRIPTION	NO.
8-2-11	Rev. grades, Lot 2, to show 'as built' conditions	3
7-20-11	Rev. grades, Lot 1, to show 'as built' conditions	2
5-17-11	FLIPPED HOUSE LOT 2 FROM STANDARD TO REVERSE & BUILT LEVEL SPREADER	1

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Thomas S. Bull
 Director - Department of Planning and Zoning
 Date: 4/2/10

Victor Shelton
 Chief, Division of Land Development
 Date: 4/2/10

John Quinlan
 Chief, Development Engineering Division
 Date: 4/2/10

OWNER/DEVELOPER
 BENCHMARK HOMES
 C/O CHRIS WHITEHEAD
 8450 SAVAGE GUILFORD ROAD
 SAVAGE, MARYLAND 20763
 410-792-0900

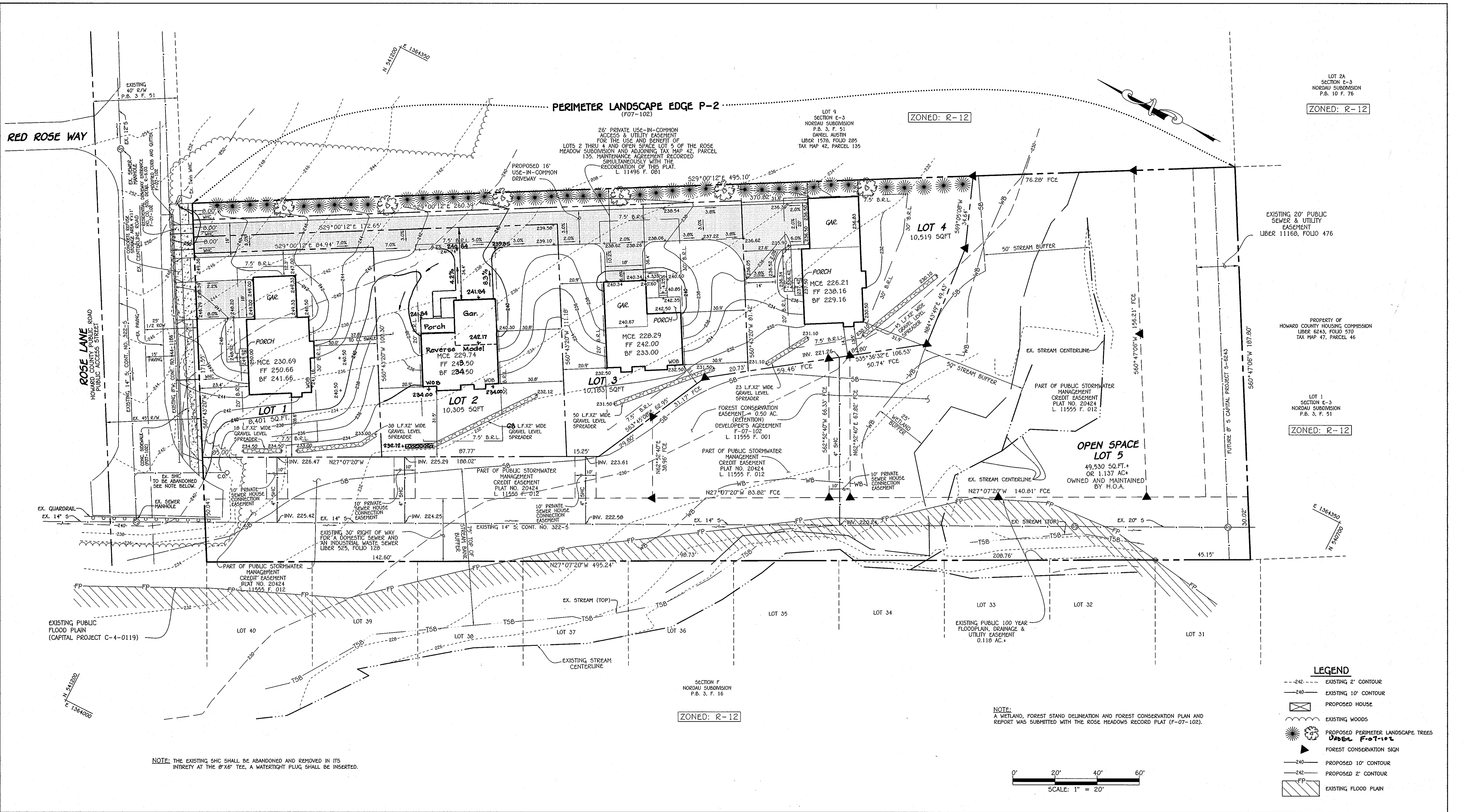
PROJECT	SECTION/AREA	PARCELS	LOTS
ROSE MEADOWS	-	133	1-5
PLAT NO. 20424	BLOCK NO. 24	ZONE R-12	TAX MAP 42
ELEC. DIST. SIXTH		CENSUS TR. 6069.01	
WATER CODE 44-1186		SEWER CODE 322-5	

SITE DEVELOPMENT PLAN

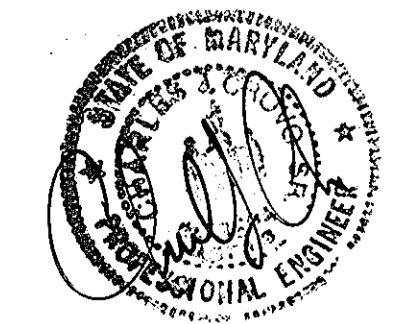
SINGLE FAMILY DETACHED
ROSE MEADOWS
 LOTS 1 THRU 4 AND OPEN SPACE LOT 5

PREVIOUS FILE NUMBER F-07-102
 ZONED: R-12
 TAX MAP No.: 42 GRID No.: 24
 PARCEL No.: 133
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1"=20' DATE: APRIL 7, 2010

SHEET 2 OF 5
 SDP-10-074



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CONTINENTAL SQUARE OFFICE PARK - 10272 BALDORNE NATIONAL PIKE
ELKROTT CITY, MARYLAND 21042
(410) 461-2895



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Charles J. Croft, Sr.
CHARLES J. CROFT, SR., P.E.

4/7/10 DATE

5-17-11	FLIPPED HOUSE LOT 3, FROM STANDARD TO REVERSE & EXTEND LEVEL SPREADER	1
DATE	DESCRIPTION	No.
REVISION BLOCK		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>Mona S. Subler</i>	Director, Department of Planning and Zoning	4/21/10 Date
<i>Victor Shalinski</i>	Chief, Division of Land Development	4/21/10 Date
<i>Michael Quinlan</i>	Chief, Development Engineering Division	4/21/10 Date

OWNER/DEVELOPER			
BENCHMARK HOMES C/O CHRIS WHITEHEAD 8450 SAVAGE GUILFORD ROAD SAVAGE, MARYLAND 20763 410-792-0900			
PROJECT	SECTION/AREA	PARCELS	LOTS
ROSE MEADOWS	-	133	1-5
PLAT NO.	BLOCK NO.	ZONE	TAX MAP
20424	24	R-12	42
ELEC. DIST.		CENSUS TR.	
SIXTH		6069.01	
WATER CODE	SEWER CODE		
44-1186	322-5		

SITE DEVELOPMENT PLAN

SINGLE FAMILY DETACHED ROSE MEADOWS
LOTS 1 THRU 4 AND OPEN SPACE LOT 5

PREVIOUS FILE NUMBER F-07-102
ZONED: R-12
TAX MAP No.: 42 GRID No.: 24
PARCEL No.: 133
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1"=20' DATE: APRIL 7, 2010

SHEET 2 OF 5 SDP-10-074

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein. All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug; no heated-in plants from cold storage will be accepted.

Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.

Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.

Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of site construction.

Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.

Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence.

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plans.

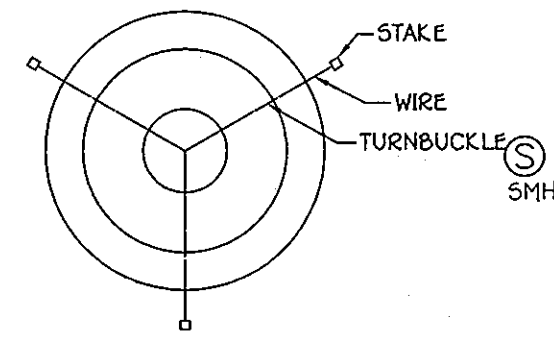
Positive drainage shall be maintained in planting beds (2 percent slope).

Planting mix shall be as follows: Deciduous Plants - two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs. of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.

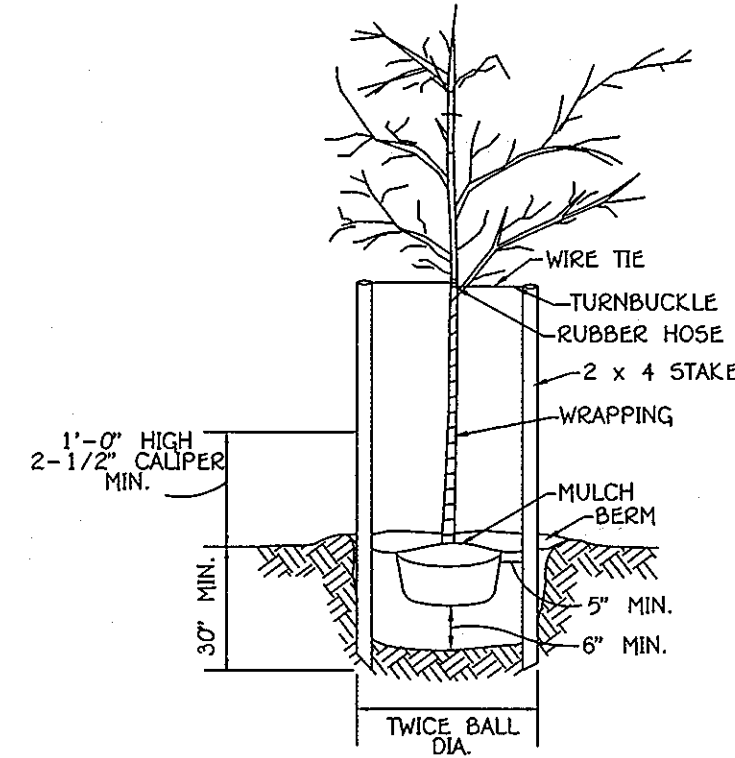
Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific ground cover to be treated.

All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.

This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

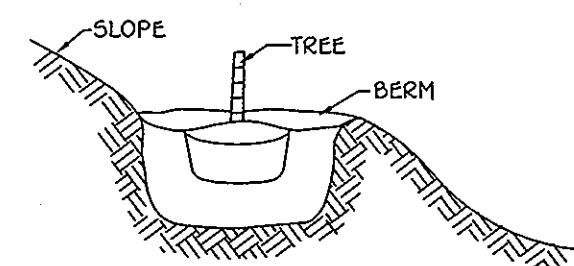


STAKING DETAIL
NOT TO SCALE

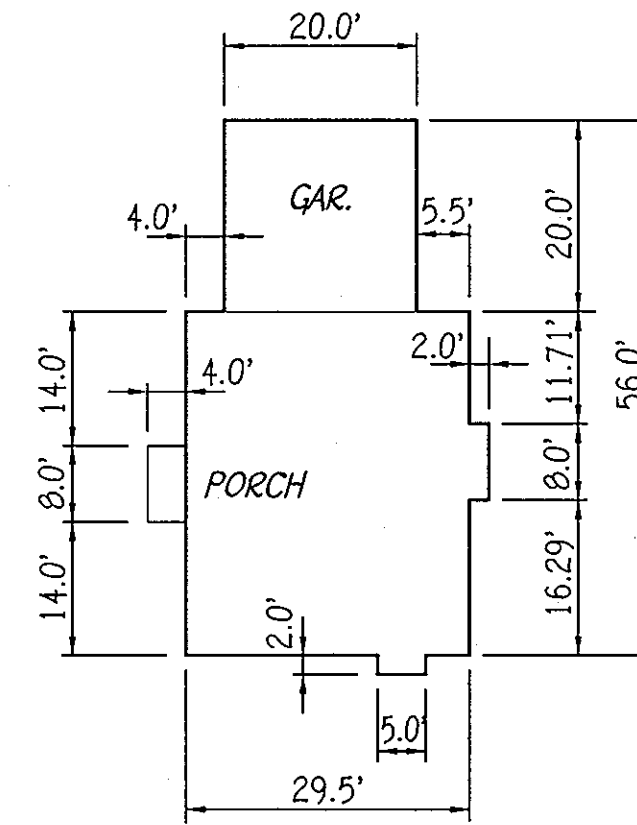
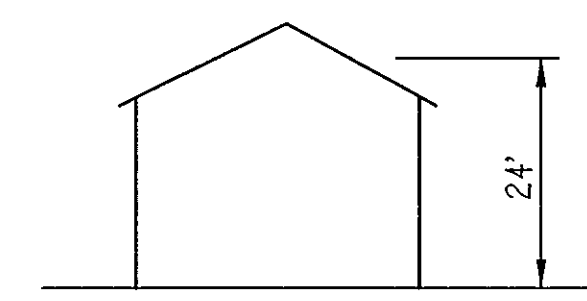


NOTE: REMOVE BURLAP FROM TOP 1/3 OF BALL

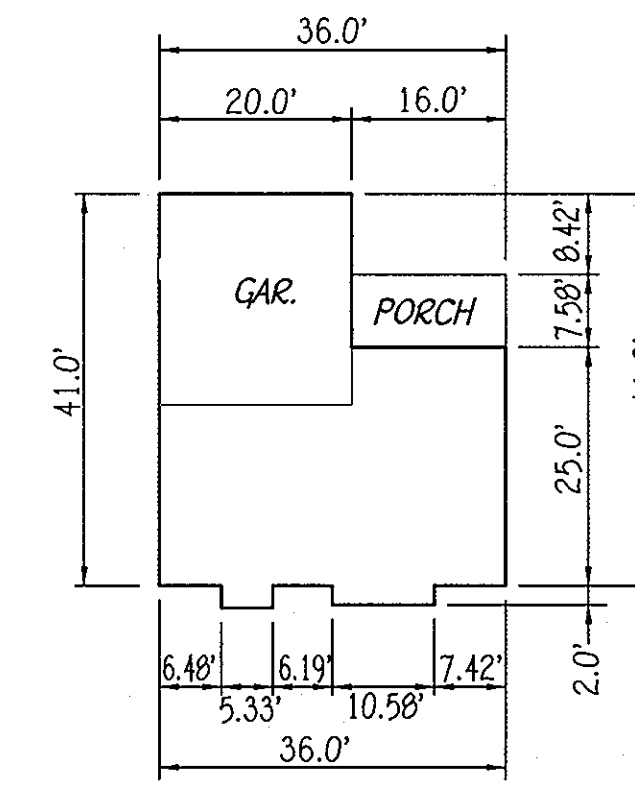
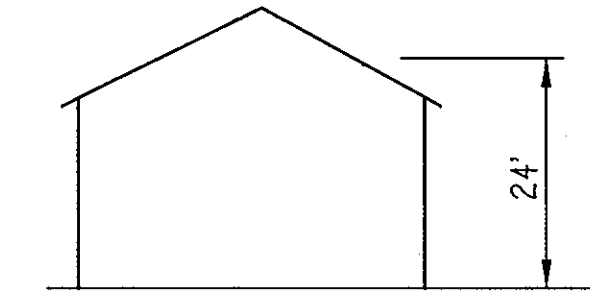
TREE PLANTING
NOT TO SCALE



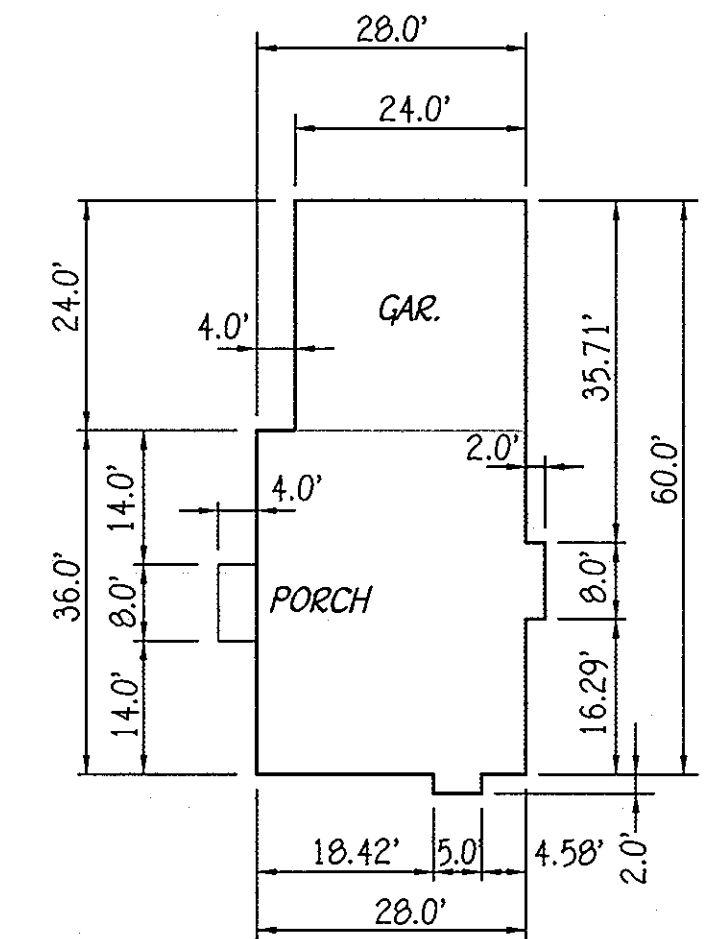
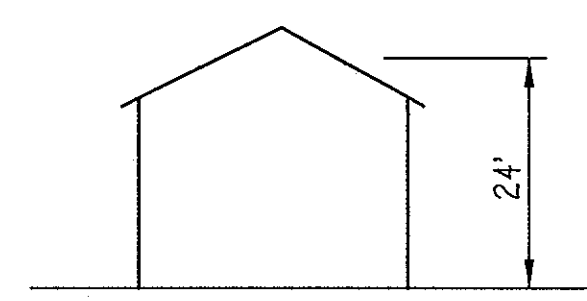
GRADING FOR PLANTING ON SLOPES
NOT TO SCALE



LOT 1 HOUSE



LOT 2 & 3 HOUSE



LOT 4 HOUSE

SCHEDULE A - PERIMETER LANDSCAPE EDGE

PERIMETER	P-1	P-2	P-3	P-4	TOTAL
CATEGORY	ADJACENT TO ROADWAY	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	—
LANDSCAPE TYPE	N/A	D	A	A	—
LINEAR FEET OF PERIMETER	171.55 L.F.	495.00' L.F.	187.80 L.F.	495.24 L.F.	—
NUMBER OF PLANTS REQUIRED	N/A	495'/60' = 8	187.80'/60' = 3	495.24'/60' = 8	—
SHADE TREES	—	495'/10' = 50	0	0	—
EVERGREEN TREES	—	—	—	—	—
CREDIT FOR EXISTING VEGETATION	N/A	CREDIT FOR EXISTING WOODS	EXISTING WOODS (187.80')	EXISTING WOODS (495.24')	—
SHADE TREES	—	124.28'/60' = 2	187.80'/60' = 3	495.24'/60' = 8	—
SMALL/MEDIUM DECIDUOUS TREES (2:1 SUBSTITUTION)	—	124.28'/10' = 12	—	—	—
NUMBER OF PLANTS PROVIDED	N/A	8 REQUIRED - 2 CREDIT = 6	3 REQUIRED - 3 CREDIT = 0	8 REQUIRED - 8 CREDIT = 0	6
SHADE TREES	—	50 REQUIRED - 12 CREDIT = 38	0	0	38
EVERGREEN TREES (2:10)	—	—	—	—	—

LANDSCAPING IS UNDER F-07-102

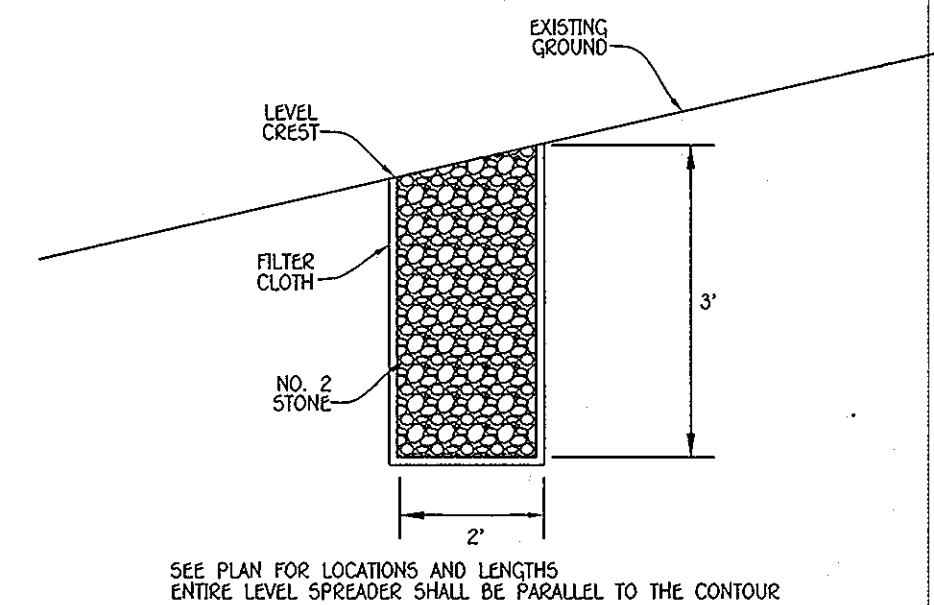
LANDSCAPING PLANT LIST			
QTY.	KEY	NAME	SIZE
6		ACER RUBRUM "OCTOBER GLORY" (OCTOBER RED MAPLE)	2 1/2" - 3" CALIPER FULL CROWN 5/8
38		PINUS STROBUS EASTERN WHITE PINE	6" - 8" HGT

BUILDER/DEVELOPER'S/CERTIFICATE

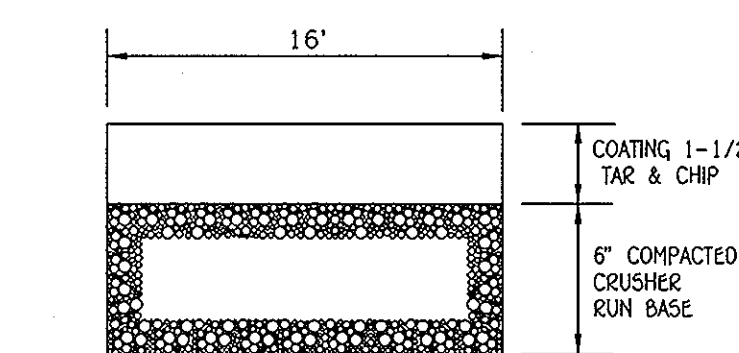
I/WE CERTIFY THAT THE REQUIRED LANDSCAPING WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF NOTICE ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Chris Whitehead 4-9-10
 Chris Whitehead, Inc. Date

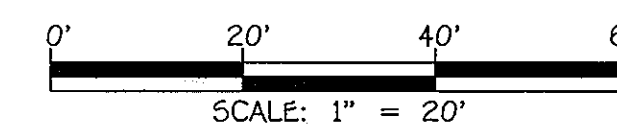
- LEGEND**
- 242— EXISTING 2' CONTOUR
 - 240— EXISTING 10' CONTOUR
 - PROPOSED HOUSE
 - EXISTING WOODS
 - PROPOSED PERIMETER LANDSCAPE TREES
 - FOREST CONSERVATION SIGN
 - 240— PROPOSED 10' CONTOUR
 - 242— PROPOSED 2' CONTOUR



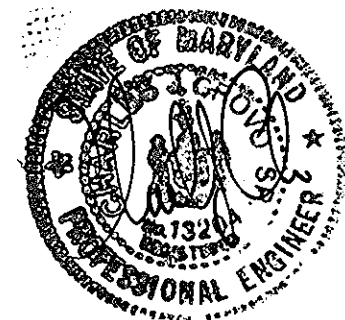
LEVEL SPREADER DETAIL
NOT TO SCALE



COMMON DRIVEWAY DETAIL
NOT TO SCALE



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 CENTRAL SOURCE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELKLOTT CITY, MARYLAND 21042
 (410) 461-2899



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2010."
Charles J. Celino, Sr.
 CHARLES J. CELINO, SR., P.E. 4/2/10 DATE

DATE	DESCRIPTION
	REVISION BLOCK
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Thomas E. Riddle</i>	4/2/10 Date
Director - Department of Planning and Zoning	
<i>Neil Shulman</i>	4/2/10 Date
Chief, Division of Land Development	
<i>Chris Whitehead</i>	4/20/10 Date
Chief, Development Engineering Division	

OWNER/DEVELOPER					
BENCHMARK HOMES C/O CHRIS WHITEHEAD 8450 SAVAGE GUILFORD ROAD SAVAGE, MARYLAND 20763 410-792-0900					
PROJECT	SECTION/AREA	PARCELS	LOTS		
ROSE MEADOWS	-	133	1-5		
PLAT NO.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
20424	24	R-12	42	SIXTH	6069.01
WATER CODE	SEWER CODE				
44-1186	322-5				

DETAIL SHEET	
SINGLE FAMILY DETACHED	
ROSE MEADOWS	
LOTS 1 THRU 4 AND OPEN SPACE LOT 5	
PREVIOUS FILE NUMBER	F-07-102
ZONED:	R-12
TAX MAP No.:	42 GRID No.:
	24
PARCEL No.:	133
SIXTH ELECTION DISTRICT	HOWARD COUNTY, MARYLAND
SCALE: 1" = 20'	DATE: APRIL 7, 2010
SHEET 4 OF 5	SDP-10-074

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

VEGETATIVE STABILIZATION SPECIFICATIONS are used to promote the establishment of vegetation on eroded soil. Runoff soil is utilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES
This practice shall be used on denuded areas as specified on the plan. This practice is intended for use on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (Up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are Temporary Soil Stockpiles, disturbed areas being left idle between construction phases, etc. and for Permanent Seeding are lawns, dunes, cut and fill slopes and other areas at final grade, former stockpiles and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY
Planting vegetation in disturbed areas will have an effect on the water balance, especially in terms of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

SEEDING PREPARATION
Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
1. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
2. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
3. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact rates and application rates for both lime and fertilizer on sites over 5 acres. The tests shall be performed by a laboratory approved by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
2. Fertilizer analysis, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state and federal laws and shall be in the original container and in a condition suitable for use.
3. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
4. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

C. Seeding Preparation
1. Temporary Seeding
a. Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of multiple tillage or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be over-disked or over-roughed. The soil should be smoothed and left in the roughened condition (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
b. Seedy fertilizer and lime as prescribed on the plans.
c. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

2. Permanent Seeding
a. Minimum soil conditions required for permanent vegetative establishment:
1. Soluble salts shall be less than 500 parts per million (ppm).
2. The soil shall contain less than 40% clay, but enough fine grained material (200 to 425 plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if low organic or organic materials are to be added, then a sandy soil (<30% silt plus clay) may be acceptable.
3. Soil shall contain 1.5% minimum organic matter by weight.
4. Soil must contain sufficient pore space to permit root penetration.
5. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
b. Areas previously prepared in accordance with the above shall be reworked to a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit drainage of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
c. Apply soil amendments as per soil test or as included on the plans.
d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leading the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-2" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

D. Seed Specifications
1. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized laboratory. If re-testing is required, the seed must be re-tested within 12 months immediately preceding the date of sowing such material on the job.
2. Seed mix shall be made available to the inspector for inspection and use of seed used.
3. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria. It shall be applied to the seed in a very uniform manner and in the amount and at the time indicated on the container. Add fresh inoculant as directed on package. Use four times the amount of inoculant for seed treated with a nitrogen-fixing bacteria. Inoculant is most effective when applied to seed in a dry condition. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
4. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

E. Methods of Seeding
1. Hydroseeding - Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, of a cultipacker seeder.
a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: Nitrogen: maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorus): maximum of 100 lbs. per acre total of P205; K2O (potassium): maximum of 100 lbs. per acre total of K2O.
b. Lime - use only ground agricultural limestone. (Up to 3 tons per acre may be applied by hydroseeding). Normally not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

2. Dry Seeding - This includes use of conventional drop or broadcast spreaders.
a. Seed spreader shall be conventional drop or broadcast spreader on the Temporary or Permanent Seeding Summaries or Tables 205 or 210. The seeded area shall then be raked or smoothed to the surface. The seed shall be applied in a uniform manner in two directions perpendicular to each other.
b. Where practical, seed should be applied in two directions perpendicular to each other.
c. Apply 1/4" of soil cover over the seed.

3. Drill or Cultipacker Seeding - Mechanized seeders that apply and cover seed with soil.
a. Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4" inch of soil cover over the seed.
b. Where practical, seed should be applied in two directions perpendicular to each other.
c. Apply 1/4" of soil cover over the seed in each direction.

F. Match Specifications (in order of preference)
1. Straw shall consist of thoroughly threshed wheat, rye or old straw, reasonable light in color, and shall not be more than 1/4" in diameter or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
2. Wood Cellulose Fiber Matting
a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous matting.
b. WCFM shall be dyed green or contain a green dye in the package that will provide adequate cover to prevent visual inspection of the substrate.
c. WCFM, including dye, shall contain no germinants or growth inhibiting factors.
d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber matting will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The matting material shall form a batter-like ground cover on application, holding moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
e. WCFM shall contain no elements or compounds of concentration levels that will be phytotoxic.
f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 10% maximum and water holding capacity of 100% minimum.
g. Only sterile straw mulch should be used in areas where the species of grass is desired.
3. Mulching seeded areas - Mulch shall be applied to all seeded areas immediately after seeding.

G. Seeding Schedule
1. If grading is completed outside of the seeding season, mulch shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
2. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
3. Wood cellulose fiber, used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
4. Securing Straw Mulch (Mulch Anchoring) - Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
a. A mulch anchoring tool is a tractor-drawn implement equipped to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping hills, this practice should be used on the contour if possible.
b. Wood cellulose fiber may be used for anchoring grids. The fiber binder shall be applied at a net dry weight of 500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
5. Application of liquid binders should be heavier at the edges where wind catches much, such as on valleys and crest of banks. The remainder of area should be applied uniformly under application. Synthetic binders - such as Acrylic ULR (Ago-Tack), DCA-70 Personal, Terra Tax and others - may be used. Other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
6. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 12' feet wide and 300 to 3,000 feet long.

2. Permanent Seeding
a. Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of multiple tillage or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be over-disked or over-roughed. The soil should be smoothed and left in the roughened condition (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
b. Seedy fertilizer and lime as prescribed on the plans.
c. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

3. Permanent Seeding
a. Minimum soil conditions required for permanent vegetative establishment:
1. Soluble salts shall be less than 500 parts per million (ppm).
2. The soil shall contain less than 40% clay, but enough fine grained material (200 to 425 plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if low organic or organic materials are to be added, then a sandy soil (<30% silt plus clay) may be acceptable.
3. Soil shall contain 1.5% minimum organic matter by weight.
4. Soil must contain sufficient pore space to permit root penetration.
5. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
b. Areas previously prepared in accordance with the above shall be reworked to a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit drainage of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
c. Apply soil amendments as per soil test or as included on the plans.
d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leading the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-2" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

D. Seed Specifications
1. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized laboratory. If re-testing is required, the seed must be re-tested within 12 months immediately preceding the date of sowing such material on the job.
2. Seed mix shall be made available to the inspector for inspection and use of seed used.
3. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria. It shall be applied to the seed in a very uniform manner and in the amount and at the time indicated on the container. Add fresh inoculant as directed on package. Use four times the amount of inoculant for seed treated with a nitrogen-fixing bacteria. Inoculant is most effective when applied to seed in a dry condition. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
4. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

E. Methods of Seeding
1. Hydroseeding - Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, of a cultipacker seeder.
a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: Nitrogen: maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorus): maximum of 100 lbs. per acre total of P205; K2O (potassium): maximum of 100 lbs. per acre total of K2O.
b. Lime - use only ground agricultural limestone. (Up to 3 tons per acre may be applied by hydroseeding). Normally not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

2. Dry Seeding - This includes use of conventional drop or broadcast spreaders.
a. Seed spreader shall be conventional drop or broadcast spreader on the Temporary or Permanent Seeding Summaries or Tables 205 or 210. The seeded area shall then be raked or smoothed to the surface. The seed shall be applied in a uniform manner in two directions perpendicular to each other.
b. Where practical, seed should be applied in two directions perpendicular to each other.
c. Apply 1/4" of soil cover over the seed.

3. Drill or Cultipacker Seeding - Mechanized seeders that apply and cover seed with soil.
a. Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4" inch of soil cover over the seed.
b. Where practical, seed should be applied in two directions perpendicular to each other.
c. Apply 1/4" of soil cover over the seed in each direction.

F. Match Specifications (in order of preference)
1. Straw shall consist of thoroughly threshed wheat, rye or old straw, reasonable light in color, and shall not be more than 1/4" in diameter or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
2. Wood Cellulose Fiber Matting
a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous matting.
b. WCFM shall be dyed green or contain a green dye in the package that will provide adequate cover to prevent visual inspection of the substrate.
c. WCFM, including dye, shall contain no germinants or growth inhibiting factors.
d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber matting will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The matting material shall form a batter-like ground cover on application, holding moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
e. WCFM shall contain no elements or compounds of concentration levels that will be phytotoxic.
f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 10% maximum and water holding capacity of 100% minimum.
g. Only sterile straw mulch should be used in areas where the species of grass is desired.
3. Mulching seeded areas - Mulch shall be applied to all seeded areas immediately after seeding.

G. Seeding Schedule
1. If grading is completed outside of the seeding season, mulch shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
2. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
3. Wood cellulose fiber, used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
4. Securing Straw Mulch (Mulch Anchoring) - Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
a. A mulch anchoring tool is a tractor-drawn implement equipped to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping hills, this practice should be used on the contour if possible.
b. Wood cellulose fiber may be used for anchoring grids. The fiber binder shall be applied at a net dry weight of 500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
5. Application of liquid binders should be heavier at the edges where wind catches much, such as on valleys and crest of banks. The remainder of area should be applied uniformly under application. Synthetic binders - such as Acrylic ULR (Ago-Tack), DCA-70 Personal, Terra Tax and others - may be used. Other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
6. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 12' feet wide and 300 to 3,000 feet long.

4. Permanent Seeding
a. Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of multiple tillage or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be over-disked or over-roughed. The soil should be smoothed and left in the roughened condition (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
b. Seedy fertilizer and lime as prescribed on the plans.
c. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

5. Permanent Seeding
a. Minimum soil conditions required for permanent vegetative establishment:
1. Soluble salts shall be less than 500 parts per million (ppm).
2. The soil shall contain less than 40% clay, but enough fine grained material (200 to 425 plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if low organic or organic materials are to be added, then a sandy soil (<30% silt plus clay) may be acceptable.
3. Soil shall contain 1.5% minimum organic matter by weight.
4. Soil must contain sufficient pore space to permit root penetration.
5. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
b. Areas previously prepared in accordance with the above shall be reworked to a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit drainage of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
c. Apply soil amendments as per soil test or as included on the plans.
d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leading the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-2" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

D. Seed Specifications
1. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized laboratory. If re-testing is required, the seed must be re-tested within 12 months immediately preceding the date of sowing such material on the job.
2. Seed mix shall be made available to the inspector for inspection and use of seed used.
3. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria. It shall be applied to the seed in a very uniform manner and in the amount and at the time indicated on the container. Add fresh inoculant as directed on package. Use four times the amount of inoculant for seed treated with a nitrogen-fixing bacteria. Inoculant is most effective when applied to seed in a dry condition. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
4. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

E. Methods of Seeding
1. Hydroseeding - Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, of a cultipacker seeder.
a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: Nitrogen: maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorus): maximum of 100 lbs. per acre total of P205; K2O (potassium): maximum of 100 lbs. per acre total of K2O.
b. Lime - use only ground agricultural limestone. (Up to 3 tons per acre may be applied by hydroseeding). Normally not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

2. Dry Seeding - This includes use of conventional drop or broadcast spreaders.
a. Seed spreader shall be conventional drop or broadcast spreader on the Temporary or Permanent Seeding Summaries or Tables 205 or 210. The seeded area shall then be raked or smoothed to the surface. The seed shall be applied in a uniform manner in two directions perpendicular to each other.
b. Where practical, seed should be applied in two directions perpendicular to each other.
c. Apply 1/4" of soil cover over the seed.

3. Drill or Cultipacker Seeding - Mechanized seeders that apply and cover seed with soil.
a. Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4" inch of soil cover over the seed.
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F. Match Specifications (in order of preference)
1. Straw shall consist of thoroughly threshed wheat, rye or old straw, reasonable light in color, and shall not be more than 1/4" in diameter or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
2. Wood Cellulose Fiber Matting
a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous matting.
b. WCFM shall be dyed green or contain a green dye in the package that will provide adequate cover to prevent visual inspection of the substrate.
c. WCFM, including dye, shall contain no germinants or growth inhibiting factors.
d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber matting will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The matting material shall form a batter-like ground cover on application, holding moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
e. WCFM shall contain no elements or compounds of concentration levels that will be phytotoxic.
f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 10% maximum and water holding capacity of 100% minimum.
g. Only sterile straw mulch should be used in areas where the species of grass is desired.
3. Mulching seeded areas - Mulch shall be applied to all seeded areas immediately after seeding.

G. Seeding Schedule
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a. A mulch anchoring tool is a tractor-drawn implement equipped to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping hills, this practice should be used on the contour if possible.
b. Wood cellulose fiber may be used for anchoring grids. The fiber binder shall be applied at a net dry weight of 500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
5. Application of liquid binders should be heavier at the edges where wind catches much, such as on valleys and crest of banks. The remainder of area should be applied uniformly under application. Synthetic binders - such as Acrylic ULR (Ago-Tack), DCA-70 Personal, Terra Tax and others - may be used. Other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
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4. Permanent Seeding
a. Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of multiple tillage or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be over-disked or over-roughed. The soil should be smoothed and left in the roughened condition (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
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D. Seed Specifications
1. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized laboratory. If re-testing is required, the seed must be re-tested within 12 months immediately preceding the date of sowing such material on the job.
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E. Methods of Seeding
1. Hydroseeding - Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, of a cultipacker seeder.
a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: Nitrogen: maximum of 100 lbs. per acre total of soluble